doute servi de modèle à Daudin pour les figures 1 et 2 des planches citées ci-dessus. Le Muséum possède toujours les dessins originaux de ces planches.

10. Cependant le choix possible du spécimen LACM 43927 comme néotype de *Rana tinctoria* Cuvier suscite plusieurs remarques: (1) cet exemplaire ne provient pas de la région de Cayenne, où furent sûrement recoltés les spécimens vus par Buffon et Cuvier, mais de celle de la rivière Matarony, qui n'était sans doute pas explorée à cette époque là; ceci n'est pas conforme à l'article 75c(5) du Code; (2) le dessin dorsal de cet exemplaire n'est pas exactement semblable à celui de la figure 1 de Daudin, 1803, pl. 8, qui a une bande en forme de double croissant sur la face dorsale de la tête; (3) sa taille (49.0 mm) est plus grande que celle des individus de la région de Cayenne; (4) sa coloration en vie décrite par Silverstone, 1975, p. 45 est différente de celle évoquée par Buffon, 1779, p. 235.

11. Le dessin dorsal du spécimen représenté par Daudin, 1803, pl. 8, fig. 1, la coloration bleu azur et jaune d'or et une taille plus petite que chez les individus du bassin de l'Approuague, qui comprend le Matarony, ou de l'intérieur de la Guyane sont caractéristiques des populations des environs de Cayenne.

12. Il est donc souhaitable de choisir le néotype de *Rana tinctoria* Cuvier parmi des exemplaires capturés dans cette région. Malheureusement nous ne disposons pas actuellement d'un spécimen en excellent état qui satisfait à toutes les exigences énnumérées ci-dessus et qui, par conséquent, serait susceptible de remplir cette fonction.

13. Rappelons que du point de vue de la stabilité nomenclaturale, l'espèce endémique des Guyanes, *Dendrobates tinctorius* (Cuvier), a toujours été considérée comme caractéristique du genre *Dendrobates,* que celui-ci soit pris au sens restreint de Silverstone, 1975, ou plus large de Myers & Daly, 1971, p. 141; 1976, p. 180 (Laurent, 1942, *Bull. Mus. roy. Hist. nat. Belgique,* vol. 43, p. 12; Hoogmoed, 1969, *Zool. Meded.*, vol. 44, p. 133).

## (2) *DENDROBATES* WAGLER, 1830 AND DENDROBATIDAE COPE, 1865 (AMPHIBIA, ANURA): PROPOSED CONSERVATION

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Silverstone, 1971, submitted in this Bulletin an application concerning the generic name *Dendrobates* Wagler, 1830 (Amphibia, Anura). He asked the International Commission on

Zoological Nomenclature to use its plenary powers to designate *Calamita tinctoria* Schneider, 1799 as the type-species of *Dendrobates* Wagler, 1830 and to place both these names on the Official Lists; he also asked the Commission to place the generic name *Phyllobates* Duméril & Bibron, 1841 and the specific name *Phyllobates bicolor* Duméril & Bibron, 1841, its type-species by monotypy, on the Official Lists.

2. As a result of the comments on this application submitted by Myers & Daly, 1971, Cuellar et al., 1972 and Peters et al., 1972, who pointed to several uncertainties and difficulties in this case, the Commission deferred its decision and no action has until now been taken concerning the above mentioned names. This is highly fortunate, because, as will be shown below, the original application and the subsequent comments were suffering from several misinterpretations and omissions concerning the basic facts. The following new points are discussed below:

(a) as correctly mentioned by Lescure, p. 265, the first valid designation of a type species for *Dendrobates* Wagler, 1830, was not made by Fitzinger, 1843, as stated by Silverstone, 1971, and accepted by the subsequent commentators of this application, but by Duméril & Bibron, 1841, who chose the nominal species '*Hyla tinctoria* Daudin' (= *Rana tinctoria* Cuvier, 1797); no action of the Commission is therefore needed in this respect;

(b) the name *Dendrobates* Wagler, 1830, was not proposed as the name of a new genus, but as a substitute name for *Hylaplesia* Boie in Schlegel, 1827, which is itself a substitute name for *Hysaplesia* Boie in Schlegel, 1826; according to the Rules, the valid name of this genus would therefore be *Hysaplesia* and not *Dendrobates*; in order to conserve this latter name, an action by the Commission is necessary;

(c) difficulties are pointed out concerning the valid name of the family including the genera *Dendrobates* and *Phyllobates*: the names PHYLLOBATAE Fitzinger, 1843, EUBAPHIDAE Bonaparte, 1850 and HYLAPLESIDAE Günther, 1858 have priority over the name DENDROBATIDAE Cope, 1865; action by the Commission is therefore necessary to conserve this latter name.

3. After a detailed presentation of these basic facts, new proposals will be made to solve the nomenclatural problems in existence.

4. Boie, in Schlegel, 1826, p. 239, created the genus *Hysaplesia* for seven nominal species of frogs of which none was designated as type; one year later, the same name was again proposed as new (Boie in Schlegel, 1827, p. 294), but under the different spelling *Hylaplesia*. Stejneger, 1937, is probably correct in stating that the spelling *Hysaplesia* was due to a misprint and was

later corrected into *Hylaplesia,* but since only the first spelling appears in the original publication and since there exists in the original publication itself no 'clear evidence of an inadvertent error', *Hysaplesia* must be considered the correct original spelling of this name (Art. 32). *Hylaplesia* is therefore an unjustified emendation and hence a substitute name of *Hysaplesia,* and has its own status in nomenclature (Art. 33).

5. The seven nominal species mentioned by Boie (in Schlegel, 1826, 1827) as members of the genus *Hysaplesia* (or *Hylaplesia*) are "*H.borbonica* Kuhl & Van Hasselt" (nomen nudum), "*H. achatina* Kuhl & Van Hasselt" (nomen nudum), *Hyla trivittata* Spix, *Hyla nigerrima* Spix, *Hyla punctata* Daudin, *Hyla tinctoria* Daudin and *Hyla luteola* Max.

6. Fitzinger, 1843, p. 31, designated "*Hylapl. achatina* Boie" as type species of *Hylaplesia.* However the specific name *achatina,* which appeared in Schlegel's (1826, 1827) papers, was not accompanied therein by any description or indication and was therefore a nomen nudum at that date. The species *achatina* was first briefly described by Tschudi, 1838, p. 71, who erected for it his new genus *Microhyla.* The name *Microhyla achatina* Tschudi, 1838, has status in nomenclature and is still in use for a species of frog from Java (see Parker, 1934, p. 136). However, this name became available only in 1838 and the nominal species *Microhyla achatina* Tschudi, 1838, cannot be regarded as being part of the originally included species of *Hysaplesia* Boie in Schlegel, 1826. Therefore the designation of this species (which had by then been described) as type species of *Hylaplesia* (and hence *Hysaplesia*) by Fitzinger, 1843, is invalid.

7. The name *borbonica* being in the same case as *achatina,* five valid names remain, among which the one that denotes the type species of *Hysaplesia* must be chosen. Stejneger, 1937, p. 139, believing that no such designation had ever been made, designated '*Hyla punctata* Daudin' (= *Calamita punctata* Schneider, 1799) as type species of *Hylaplesia* (and hence *Hysaplesia*). Duellman, 1977, p. 23, regarded this action as valid, and consequently included *Hylaplesia* (but not *Hysaplesia,* which he failed to mention) in the synonymy of *Hyla* Laurenti, 1768. However, as will be shown below, Stejneger's action is invalid and the name *Hylaplesia* must be removed from this synonymy.

8. Wagler, 1830, p. 202, created the generic name *Dendrobates*. Silverstone, 1971, p. 262, presented the history of this nominal genus and of its type-species designation as follows: 'Wagler 1830 included three species in his genus *Dendrobates, Hyla nigerrima* Spix, 1824, p. 36, *Calamita tinctoria* Schneider, 1799, p. 175, and *Hyla trivittata* Spix, 1824, p. 35, but did not designate one of

them as the type-species. Fitzinger 1843, p. 32 designated *Hyla nigerrima* as the type-species.'

9. Myers & Daly, 1971, Cuellar et al., 1972, and Peters et al., 1972, did not discuss the above statements of Silverstone, 1971, but focussed their discussions on other aspects of Silverstone's application. However, as will be shown below, these statements are misleading, and consequently the discussions relying on them are irrelevant.

10. Silverstone, 1971, credited Wagler, 1830, with the creation of a new genus *Dendrobates.* However, an examination of Wagler's book shows clearly that this author only proposed a substitute name for the genus already created by Boie under the name *Hysaplesia* (later emended to *Hylaplesia*).

11. Just after the newly introduced name *Dendrobates,* Wagler (1830, p. 202) added a footnote, which reads as follows: "1) Δευδϱος arbor, et βαιυω incedo. — Gen. *Hylaplesia H. Boie* Isis 1827. p. 294. — *Hylaplesia borbonica* und *H. achatina H. Boie* a. m. O., aus Indien, kenne ich nicht." This is a clear indication of *Dendrobates* being a mere synonym of *Hylaplesia,* i.e. a substitute name for it. Similar other cases of substitute names, followed by a footnote indicating the etymology of the new name and the replaced name, are to be found in Wagler's text. Curiously, subsequent authors have applied a different treatment to these various cases: while some of these names were clearly recognized as substitute names, other ones, although proposed in exactly the same way, were considered as the names of new genera. As concerns the Amphibia Anura, the substitute names proposed by Wagler, 1830, are four in number: *Asterodactylus* (p. 199) for *Pipa* Laurenti, 1768; *Dendrobates* (p. 202) for *Hylaplesia* Boie in Schlegel, 1827; *Enydrobius* (p. 202) for *Hylodes* Fitzinger, 1826; and *Systoma* (p. 205) for *Engystoma* Fitzinger, 1826. Wagler, 1830, also introduced unjustified emendations (a particular case of substitute names) for generic names, such as, in the Anura, *Megalophrys* (p. 204) for *Megophrys* Kuhl & Van Hasselt, 1822. Among the above mentioned names, *Enydrobius* was recognized by subsequent authors as a substitute name for *Hylodes* (see e.g. Myers, 1962, p. 196; Lynch, 1971, p. 166) and *Megalophrys* as an unjustified emendation of *Megophrys* (see e.g. Gorham, 1966, p. 15; Dubois, 1980, p. 472). On the other hand, *Asterodactylus* was erroneously believed to be a new genus, with a type species different from that of *Pipa* (see e.g. Gorham, 1966, p. 4); the same applies to *Dendrobates* versus *Hylaplesia*, and to *Systoma* versus *Engystoma.*

12. The name *Dendrobates* being a substitute name for *Hylaplesia,* which is in its turn a substitute name for *Hysaplesia,* this latter name, which has no senior homonym, would under the Rules

be the valid name for the genus universally known under the name *Dendrobates* since more than a century (see Appendix). Such a change would highly threaten the stability of nomenclature and is to be avoided. Therefore the Commission is asked below to suppress the generic names *Hysaplesia* and *Hylaplesia* in order to validate the well-known name *Dendrobates*.

13. Silverstone, 1971, stated that Fitzinger, 1843, was the author of the first valid designation of a type species for *Dendrobates*. As pointed out by Lescure, p. 265, this is incorrect. Silverstone overlooked the fact that Duméril & Bibron, 1841, p. 651, clearly made such a designation.

14. Duméril & Bibron, 1841, retained *Dendrobates* as the valid generic name for a genus including '*Hyla tinctoria* Daudin'. On the other hand, they did not reject *Hylaplesia*, as Wagler, 1830, had done, as a strict synonym of *Dendrobates*. They stated that this name would remain available for the nominal species '*borbonica* Boie' if this latter was to be recognised as generically distinct from '*Hyla tinctoria*'. By doing so they almost explicitly designated '*Hylaplesia borbonica* Kuhl & Van Hasselt' as type species of *Hylaplesia*. However, on one hand this designation is not explicit enough to be valid under the Rules of the current Code, and on the other hand, as discussed above in paragraph 6, in the case of the name *Hylaplesia achatina*, the name *borbonica* was not available in 1826 and 1827; the nominal species *Hylaplesia borbonica* Tschudi, 1838 cannot be considered as being part of the originally included species of *Hylaplesia* and is not eligible for type-fixation in this genus.

15. Remains Duméril & Bibron's 1841 action concerning the generic name *Dendrobates*. As was discussed by Lescure, p. 265, Duméril & Bibron, 1841, p. 651, made a clear designation of '*Hyla tinctoria* Daudin' (= *Rana tinctoria* Cuvier, 1797) as type species of *Dendrobates*. This nominal species being one of the originally included species of *Hysaplesia*, it is eligible for type fixation in *Hysaplesia*, *Hylaplesia* and *Dendrobates*. This designation being anterior to those of Fitzinger, 1843, for *Dendrobates* and of Stejneger, 1937, for *Hylaplesia*, it is the only one to be valid.

16. As a matter of fact, *Rana tinctoria* is the nominal species which Silverstone, 1971, had requested the Commission to designate under the plenary powers as the type-species of *Dendrobates*: such an action is not necessary.

17. Lescure, p. 267, independently discusses the problems associated with the choice of the specimen LACM 43927 as neotype of *Rana tinctoria*, and his contribution should be consulted in connection with this question.

18. Mention must now be made of the existence of a forgotten

junior synonym of *Dendrobates,* namely *Eubaphus* Bonaparte, 1831. This new genus was proposed by Bonaparte, 1831, p. 76, as follows: '*Eubaphus,* Nob. mss. (*Rana tinctoria,* Shaw)'. The name *Eubaphus* was later used again in several different works by Bonaparte (1832 a, p. 318; 1832 b, p. 25; 1833, p. 1196), but, to my knowledge, no other author has ever mentioned the existence of this name. This nominal genus, based on the type species '*Rana tinctoria* Shaw' (= *Rana tinctoria* Cuvier, 1797) is an objective synonym of *Hysaplesia, Hylaplesia* and *Dendrobates,* but being a junior synonym of these names its existence does not threaten in the least the stability of generic nomenclature. However, as will be shown below, it has some bearing on the nomenclatural problems at the family level in this group.

19. Starting with Boulenger, 1882, p. 140, most herpetologists (see Appendix) have used the name DENDROBATIDAE Cope, 1865, under this spelling or under the spelling DENDROBATINAE Gadow, 1901 [sic] as the valid name for the family or the subfamily including the genera *Dendrobates* Wagler, 1830, *Phyllobates* Duméril & Bibron, 1841 and *Colostethus* Cope, 1866. However, there exist three other family-group names, two of which have been overlooked until now, which have priority over this name. To maintain the stability of nomenclature, an action of the Commission is therefore necessary.

20. The first available name for this family-group is PHYLLOBATAE Fitzinger, 1843, based on the generic name *Phyllobates* Duméril & Bibron, 1841. Savage, 1968, pointed to the existence of this senior synonym of DENDROBATIDAE, but used the latter name for the family. He wrote (1968, p. 747): 'The name Dendrobatidae was first used by Cope (1865), but this name has been generally used for the family during the last 25 years. Under terms of Art. 23d(ii) of the Rules, Dendrobatidae should be retained as the family name.' Curiously, however, he did not 'request the Commission to decide which name is to be accepted for the Official List of Family-Group Names in Zoology', as was implied by his reference to Art. 23. Myers & Daly, 1976, p. 180 agreed with Savage and wrote: 'We follow Savage (1968, p. 747) in using the family name Dendrobatidae Cope, rather than an older available name (Phyllobatidae Fitzinger); such usage eventually should be legalized by the International Commission on Zoological Nomenclature, even though Savage seemed to suggest that the matter is settled'. However, I know of at least two authors who made use of the name PHYLLOBATIDAE as the valid name of this family: Parker, 1933, p. 12 and, very recently, Laurent, 1980 a, p. 404; 1980 b, p. 83; none of them gave a justification of this action.

21. The second name available for this family is that of

EUBAPHIDAE, proposed, together with the subfamilial name EUBAPHINA, for a family including *Eubaphus* Bonaparte, 1831, by Bonaparte himself (1850) and mentioned again later (1852, p. 478) by this author, but never, to my knowledge, by subsequent authors. *Eubaphus* being an objective synonym of *Dendrobates,* EUBAPHIDAE is also an objective synonym of DENDROBATIDAE.

22. The last senior synonym of DENDROBATIDAE is HYLAPLESIDAE Günther, 1858, also proposed as a subfamily HYLAPLESINA, names based on the generic name *Hylaplesia,* an objective senior synonym of *Dendrobates.*

23. The name DENDROBATIDAE was first published by Cope, 1865, p. 100, who later (1867, p. 191) also proposed the name COLOSTETHIDAE, based on the generic name *Colostethus* Cope, 1866. Both these new family-group names are junior synonyms of all the other family-group names mentioned above.

24. A strict application of the Law of Priority in this case would require Parker's 1933 and Laurent's 1980 a, b action to be followed and the name of the family to be changed to PHYLLOBATIDAE Fitzinger, 1843. However, as mentioned above, the name DENDROBATIDAE has been in almost universal use among herpetologists, since Boulenger's 1882 work, for the family including *Rana tinctoria* and related species, and conservation of this name is to be commended.

25. Since the name *Eubaphus* is a junior objective synonym of *Dendrobates,* the replacement of the name EUBAPHIDAE by the name DENDROBATIDAE, which took place before 1961 and which has won general acceptance, may be considered as valid by virtue of Art. 40a. The name DENDROBATIDAE takes therefore the date 1850 and must be considered a senior synonym of EUBAPHIDAE. This does not solve, however, the problem of the priority of PHYLLOBATIDAE, for which an action of the Commission is necessary.

26. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary powers
  (a) to suppress the generic names *Hysaplesia* Boie in Schlegel, 1826, and *Hylaplesia* Boie in Schlegel, 1827, for the purposes of the Law of Priority but not for those of the Law of Homonymy;
  (b) to rule that the family-group name DENDROBATIDAE Cope, 1865 (1850) is to be given nomenclatural precedence over the family-group name PHYLLOBATIDAE Fitzinger, 1843 whenever the two names are considered synonyms;

(2) to place on the Official List of Generic Names in Zoology:
  (a) *Dendrobates* Wagler, 1830 (gender: masculine), type species, by subsequent designation by Duméril & Bibron, 1841, *Rana tinctoria* Cuvier, 1797;
  (b) *Phyllobates* Duméril & Bibron, 1841 (gender: masculine), type species, by monotypy, *Phyllobates bicolor* Duméril & Bibron, 1841;

(3) to place on the Official List of Specific Names in Zoology;
  (a) *tinctoria* Cuvier, 1797, as published in the binomen *Rana tinctoria* (specific name of type species of *Dendrobates* Wagler, 1830);
  (b) *bicolor* Duméril & Bibron, 1841, as published in the binomen *Phyllobates bicolor* (specific name of type species of *Phyllobates* Duméril & Bibron, 1841);

(4) to place on the Official List of Family-Group Names in Zoology:
  (a) DENDROBATIDAE Cope, 1865 (1850) (type genus: *Dendrobates* Wagler, 1830), with an endorsement that it is to be given nomenclatural precedence over PHYLLOBATIDAE Fitzinger, 1843 (type genus *Phyllobates* Duméril & Bibron, 1841) whenever the two names are considered synonyms;
  (b) PHYLLOBATIDAE Fitzinger, 1843 (type genus: *Phyllobates* Duméril & Bibron, 1841) with an endorsement that it is not to be given priority over DENDROBATIDAE Cope, 1865 (1850) whenever the two names are considered to be synonyms;

(5) to place on the Official Index of Rejected and Invalid Generic Names in Zoology:
  (a) *Hysaplesia* Boie in Schlegel, 1826, and
  (b) *Hylaplesia* Boie in Schlegel, 1827,
  both as suppressed under the plenary powers in (1)(a) above;

(6) to place the family-group name HYLAPLESIDAE Günther, 1858 on the Official Index of Rejected and Invalid Family-Group Names in Zoology (invalid because the name of its type genus has been suppressed under the plenary powers in (1)(a) above).

## APPENDIX

Partial list of references of works where the names *Dendrobates* and DENDROBATIDAE (or DENDROBATINAE) are used as the valid names of the genus and family (or subfamily) including the species *Rana tinctoria* Cuvier, 1797. See also the references given by Silverstone, 1971, p. 262.

| Reference | *Dendrobates* | DENDROBATINAE | DENDROBATIDAE |
|---|---|---|---|
| Cope, 1865: | 104 | — | 100 |
| Cope, 1867: | 197 | — | 197 |
| Boulenger, 1882: | 142 | — | 140 |
| Gadow, 1901: | 272 | 139 | — |
| Fejérváry, 1921: | 28 | — | 28 |
| Noble, 1931: | 507 | 507 | — |
| Taylor, 1952: | 633 | 632 | — |
| Griffiths, 1959: | 470 | 477 | (483) |
| Rivero, 1961: | 154 | — | 153 |
| Goin & Goin, 1962: | 227 | 227 | — |
| Savage, 1968: | 745 | — | 745 |
| Cochran & Goin, 1970: | 13 | 13 | — |
| Crump, 1972: | 195 | — | 195 |
| Bogart, 1973: | 348 | — | 337 |
| Lynch, 1973: | 135 | — | 135 |
| Savage, 1973: | — | — | 354 |
| Trueb, 1973: | 100 | — | 92 |
| Gorham, 1974: | 113 | — | 113 |
| Duellman, 1975: | — | — | 5 |
| Silverstone, 1975: | 1 | — | 1 |
| Myers & Daly, 1976: | 177 | — | 179 |
| Silverstone, 1976: | 1 | — | 1 |
| Daly et al., 1978: | 163 | — | 163 |
| Dowling & Duellman, 1978: | 35.1 | — | 35.1 |
| Duellman, 1978: | 124 | — | 121 |
| Goin, Goin & Zug, 1978: | 243 | — | 243 |
| Neuwirth et al., 1979: | 756 | — | 756 |

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